6. Charge Battery

The LG-71 is an intelligent microcontroller-controlled charging device. It charges every battery separately and automatically disconnects from the mains when charging is finished.
Optionally mains operation or 12 V operation via cigarette lighter socket.

- Charging takes place exclusively in the battery charger type LG-71
- Protect the charger against moisture and only use it inside rooms.
- Do not charge in minus temperatures.

1. Press Start button for about 2 sec. to start the charging process (only for mains operation).
2. Green LED flashes slowly: battery is being recharged.
3. Green LED on permanently: battery charged, float charging.

Note: If the battery charger is being operated on mains power, it switches itself off completely one hour after the last battery has been charged!

Note: Green LED flashes quickly: No charging, rechargeable battery is defective or a disposable battery has been placed in the device.

7. Maintenance

Please make check measurements periodically or before important surveys to detect malfunction in time. The manufacturer and his dealers accept no liability for damage or losses arising from faults or the consequences of faults.
The laser receiver requires no special maintenance.
Do not clean with water spray. Clean front window with a soft, clean cloth.
Store dry and remove rechargeable batteries when storing more than 4 weeks.
Always transport the laser receiver in its original case.

8. Troubleshooting

1. No function: check battery charge.
2. Bad reception: switch off warning/strobe lights.
3. No clock: see **4.5.**
4. Charge status indicator inaccurate: we recommend that you only use rechargeable batteries with low self-discharging technology (e. g. maxE, Ennelop, Infinium).

9. Service - Warranty

Our devices come with a guarantee of 24 months. Unauthorised opening of the device cancels the guarantee.
Please always send the receiver to us for inspection or repairs in its original case together with a note on what faults exist.

10. Disposal

The device may not be disposed of with household waste (electric and electronic scrap).

Table of Contents

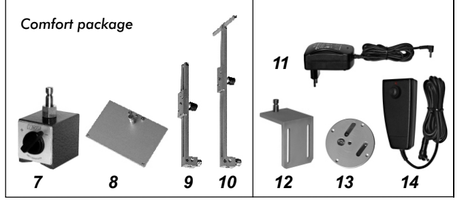
Notes:

11. Standard Delivery Package

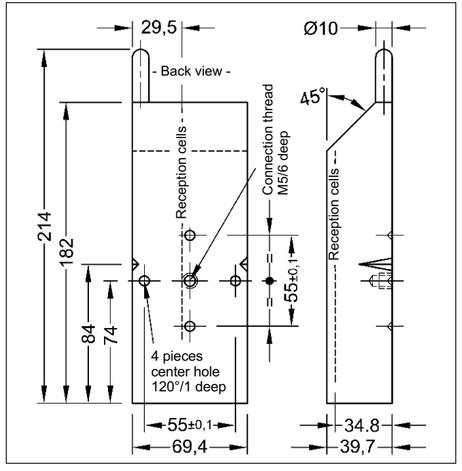
No.	Order no.	Type	Designation
1	0009.38	LE-71	Laser receiver with operating instructions
or	0009.39	LE-72	Laser receiver with operating instructions
2	0020.08		Rod clamp with ball stop
3	0037.19.001	LG-71	Battery charger
4	0037.19.002		4 x rechargeable batteries AA-NiMH
5	0037.19.003		12 V connection cable for LG-71
6	0077.39		Transport case
1- 6	**0009.38.1**		**LE-71 with standard delivery package**
or	**0009.39.1**		**LE-72 with standard delivery package**

12. Optional Accessories

No.	Order no.	Type	Designation
7	0081.00		Magnetic Foot for Laser Receivers in conjunction with fixing adapter.
8	0099.14		Mini Base Plate for Laser Receivers in conjunction with fixing adapter
9	0033.19		Fixing Adapter 260 mm, with ball stop
10	0033.20		Fixing Adapter 360 mm, with ball stop
7- 10	**0126.01.1**		**Comfort package for LE-71/-72**
11	0037.18	NE-80	Power supply/Input:110 - 230 V AC (50/60 Hz)
12	0099.00		Wall mounting bracket for laser receiver in conjunction with fixing adapter
13	0033.18		Rotatable Disc for LE-71/-72
14	0026.11		Remote control for LE-71/-72



13. Dimensional Drawing



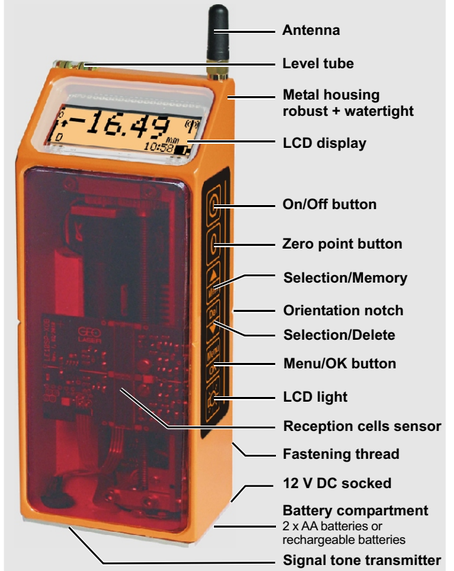
13. Outstanding Technical Specifications

Reception: laser (633 - 815 nm homogenous beam profile)
Ø from 7 - 35 mm, 0.5 - 2 mW, 300 - 800 rpm
Reception range: 0.5 - 250 m, depending on laser type
Distance to illuminants and high-voltage power lines: > 1.5 m
Reception indicator: by arrow symbol
Measured value display: digital
Resolution LE-71/LE-72: 0.01 mm/0.1 mm
Measuring accuracy LE-71/LE-72: ± 0.02 mm/± 0.15 mm
Measuring range: 70 mm
Zero offset: ± 70 mm
Measured value memory: 2600 points
Wireless interface: Bluetooth®
Bluetooth® range: to 100 m
The range is restricted by obstructions along the route of the radio signal.
Frequency range: 2.4 GH ISM band
Transmission power: < 100 mW (EIRP)
Power supply external: 9 - 14 V DC / 0.1 A max.
Batteries internal: 2 x AA HR6, NiMH; 2500 mAh
Operating time without Bluetooth/light: in cont. measurement approx. 50 hours
Operating time with Bluetooth/light: in cont. measurement approx. 20 hours
Housing: watertight, except battery compartment
Dimensions/Weight including batteries: 214 x 70 x 40 mm/0.62 kg
Warranty: 24 months
CE: certified

Battery charger LG-71
Input voltage: 100 - 240 V AC/50 - 60 Hz
12 V DC
Charging current: 800 mA
Charge indicator: LED
Charging time: approx. 4 hours
Dimensions: 106 x 70 x 31 mm
Weight: 0.14 kg

Operating Instructions

Precision
Laser Receiver LE-71/- 72
Resolution: LE-71 = 1/100 mm / LE-72 = 1/10 mm



Congratulations on your new GEO product

In addition to information on how to use the laser receiver, these operating instructions also contain important safety instructions.
Read the operating instructions carefully before using the laser receiver.

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Date 01/2016

Quick Start

1. Connect the power supply (disposable/rechargeable battery or via 12 V DC jack).
2. Press On button.
3. If necessary, set date and time (see **2.5**).
4. Select measurement mode: Press Menu/OK button.
   Select mode with ⇧ or ⇩ button (for measurement modes see **3.1** to **3.5**).
   Press Menu/OK button to confirm.
5. If necessary, select unit of measurement mm/inch:
   - Press Menu/OK button.
   - Select settings with ⇧ or ⇩ button and confirm with Menu/OK button.
   - Select unit mm/inch with ⇧ or ⇩ button and confirm with Menu/OK button.
   - Select main menu with ⇧ or ⇩ button and confirm with Menu/OK button.
   - Select measure. mode with ⇧ or ⇩ button and confirm with Menu/OK button.

1. Description of Buttons

= On/Off

1 x short = On. The company and device data are shown and the
or last measurement mode selected is run.
1 x long = As long as the display is needed.
1 x short = Renewed start for single measurement (see **3.1**).
1 x long = Off. Automatic off after about 5 minutes without reception.

= Zeroing

2 x short = Reset zero point (see **5.03** and **5.04**).

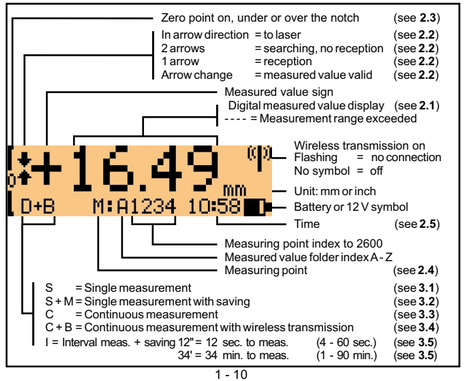
= Select up
= Save measured values (see **3.2** and **3.3**)

= Delete measured values
= Select down

= Menu
= Confirm selection

= Light on/off

2. LCD Display



2.1 Measured value:
Display optionally in mm or inch.
Select in Menu ➔ Settings ➔ Unit (see **5.02**).
If lines are shown instead of numbers, the measurement range has been exceeded, the receiver must be moved in opposite direction to the arrow in the display or wait for next laser beam search in the case of continuous measurement mode.

2.2 Arrow symbols:
The arrow shows the direction to the middle of the laser beam.
Permanent changing of the arrow direction: measured value valid.
One arrow = laser beam reception but measured value not yet valid.
Both arrows = searching for laser beam, no reception.

2.3 Zero point:
The zero point can be set at any point with the button **0**.
0 = middle means: zero point on the housing notch
0 = above or below the middle means: zero point above or below the housing notch.

2.4 M = Measuring point:
The current measuring point index is counted up automatically when saving. The measured value folder index can be selected in the corresponding submenu.

2.5 Date and time:
The time and date are set in Menu ➔ Settings ➔ Time/Date.
Use ⇧ or ⇩ button to change the value, OK button to move to next digit.

Please note: The time is only shown if the clock function is active (see **5.09**)!
If the power supply is interrupted for more than 5 minutes, the date and time must be set again (see **5.10**).

2.6 Battery or 12 V symbol:
The battery symbol indicates the charge status of the batteries.
Disposable or rechargeable batteries may be used.
Select the type of battery being used in Menu ➔ Settings ➔ Battery (see **5.11**).
If the receiver is being run via the 12 V jack, 12 V is shown in the battery symbol.

3. Main Menu: Program Selection Menu

3.1 S = Single measurement
The device carries out one measurement, the signal tone is sounded at the end of measurement (see **5.12**). The measured value can be saved with the **Mem** button. At the end of the single measurement "RESTART ?" appears in the display and the next single measurement can then be started by pressing the On button briefly within the next 60 seconds. Otherwise the receiver is switched off.

3.2 SM= Single measurement with automatic saving of the measured value
The receiver carries out a measurement. The measured value is saved automatically and the signal tone is sounded at the end of measurement (see **5.12**). If the **Del** button is pressed within 5 seconds, the saved value is deleted.

3.3 C = Continuous measurement
Pressing the **Mem** button saves the current value.
If no laser beam is found, the device carries out 3 search scans at intervals of 1 minute before the receiver is switched off.

3.4 C+B = Continuous measurement with Bluetooth® wireless transmission
Like **C** = Continuous measurement. The measured values are additionally transmitted by Bluetooth® to a PC and can be logged with date and time.

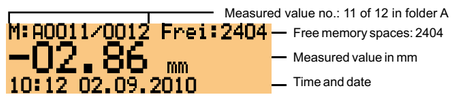
3.5 I:12' = Interval measurement with automatic saving of the measured value
A measurement is carried out in the preset time interval and the measured value is saved automatically. The time remaining until the next measurement is shown in seconds or minutes respectively.
The measurement begins with the last time interval set.
To change the interval, press the Menu/OK button, select "Set interval" and enter the required time interval.

3.6 Measured value memory

3.61 Main menu: Back to main menu

3.62 Memory folder A - Z:
Use the ⇧ or ⇩ button to change the folder (letter), press Menu/OK button to confirm the change.

3.63 Show measured values LE-71:



Use ⇧ or ⇩ button to scroll up/down through the saved measured values, press Menu/OK button to select the menu measured value management:

- **Main menu**
  Back to main menu
- **Change delete mark**
  Use ⇧ or ⇩ button to select the measured value.
  Menu/OK button sets or cancels the delete mark.
- **Measure value again**
  The current selected measured value is measured again and saved.
  Menu/OK button: Back to menu measured value management.
- **Change display folder**
  Use ⇧ or ⇩ button to change the measured value folder.
  Then use ⇧ or ⇩ to select the measured value.
  Menu/OK button: back to measured value management.

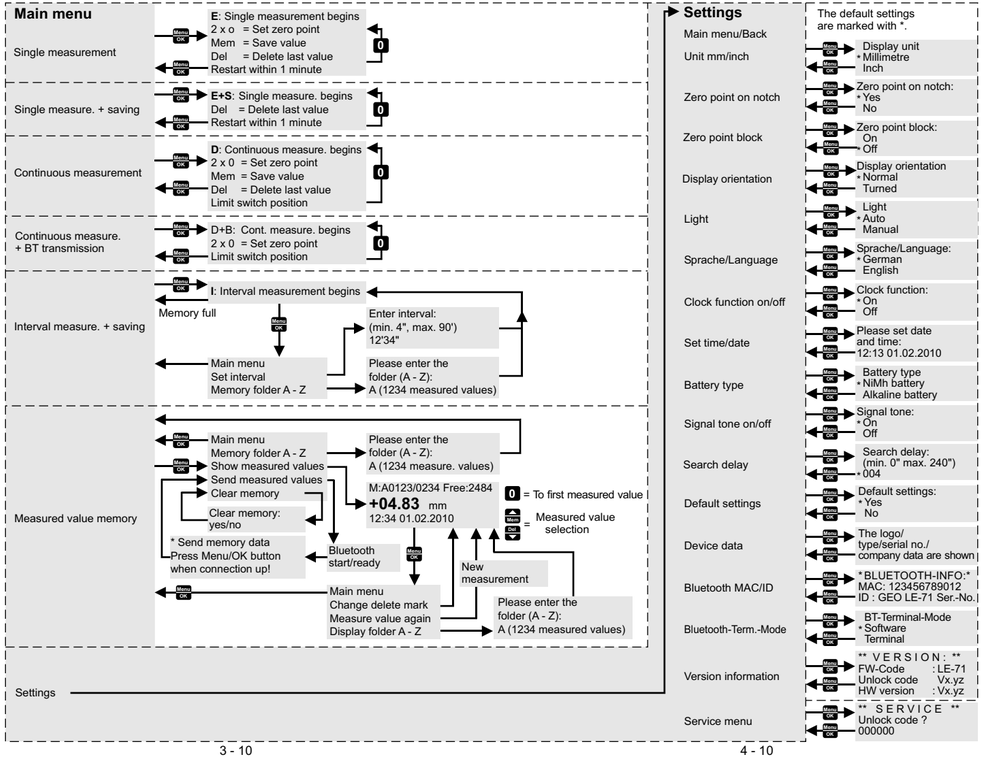
3.64 Send measured values:
Start of Bluetooth function.
After connection with the PC is up, press the Menu/OK button to transmit the measured values.

3.65 Clear memory:
Use the ⇧ or ⇩ button to select "yes" and press Menu/OK button to confirm the selection.

Please note: All stored measured values will be deleted irretrievably!

3.66 Settings: See **5.** "Settings Menu ".

4. Overview Operation



5. Settings menu:

5.01 Main menu/Back
Back to program selection menu with **OK** button.

5.02 Unit mm/inch
You can select between mm and inch.

5.03 Zero point on notch
The zero point is on the housing notch again.

5.04 Adjust zeropoint offset manually.
Change the flashing figure with the button ⇧ resp.⇩, go to the next figure with the menu/OK button.
Please note: The adjustment always refers to the box notch!

5.05 Block zero point
To prevent unwanted adjustment of the zero point, adjustment of the zero point can be blocked.

5.06 Display orientation
For better reading the display can be turned by 180° for overhead working.

5.07 Light
You can select between auto - the light stays on for 1 min. after pressing the button - and manual - the light is switched on and off with the ☼ button.

5.08 Sprache/Language
Selection of the language.

5.09 Clock function on/off
The clock function can be deactivated.

5.10 Set time/date
See **2.5.** If the receiver was without power for about 10 minutes, the time and date must be set again.

5.11 Battery
See **2.6.** Serves to improve the accuracy of the charge status indicator.

5.12 Signal tone on/off
The signal tone can be deactivated.

5.13 Search delay (only for continuous measurement)
The time until automatic new search for the laser light plane can be set from 0 to 240 seconds.
Note: 0 = automatic search deactivated.

5.14 Default settings
Back to the default settings. See **4.** Overview/Operation:
The default settings are marked with *.

5.15 Device data
Display of logo, type, serial no. and company data.

5.16 Bluetooth® MAC/ID
Display of the data relevant for the wireless transmission.

5.17 Bluetooth®-Terminal-Mode
Software = operation with the GEO transmission software.
Terminal = operation with a terminal program under Windows/Linux.

5.18 Version information
Display of the software and hardware versions.

5.19 Service menu
The internal settings menu is intended only for the manufacturer and is therefore blocked by a code.

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